I REMARKS

1.1 THE REJECTIONS FAIL TO ESTABLISH A PRIMA FACIE CASE

The rejections fail to establish a prima facie case. Judge Plager stated the following in his concurring opinion in In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

> "An applicant for a patent is entitled to the patent unless the application fails to meet the requirements established by law. It is the Commissioner's duty (acting through the examining officials) to determine that all requirements of the Patent Act are met. The burden is on the Commissioner to establish that the applicant is not entitled under the law to a patent. In re Warner, 379 F.2d 1011, 1016, 154 USPQ 173, 177 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968). In rejecting an application, factual determinations by the PTO must be based on a preponderance of the evidence, and legal conclusions must be correct. In [sic] re Caveney, 761 F.2d 671, 674, 226 USPQ 1, 3 (Fed. Cir. 1985).
>
> The process of patent examination is an interactive one. See generally, Chisum, Patents, § 11.03 et seq. (1992). The examiner cannot sit mum, leaving the applicant to shoot arrows into the dark hoping to somehow hit a secret objection harbored by the examiner. The 'prima facie case' notion, the exact origin of which appears obscure (see In re Piasecki, 745 F.2d 1468, 1472, 233 USPQ 785, 788 (Fed. Cir. 1984)), seemingly was intended to leave no doubt among examiners that they must state clearly and specifically any objections (the prima facie case) to patentability, and give the applicant fair opportunity to meet those objections with evidence and argument. To that extent the concept serves to level the playing field and reduces the likelihood of administrative arbitrariness. * * *
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> Specifically, when obviousness is at issue, the examiner has the burden of persuasion and therefore the

initial burden of production. Satisfying the burden of production, and thus initially the burden of persuasion, constitutes the so-called prima facie showing. Once that burden is met, the applicant has the burden of production to demonstrate that the examiner's preliminary determination is not correct. The examiner, and if later involved, the Board, retain the ultimate burden of persuasion on the issue.

If, as a matter of law, the issue is in equipoise, the applicant is entitled to the patent. Thus on appeal to this court as in the PTO, the applicant does not bear the ultimate burden of persuasion on the issue. In the end there is no reason there or here to argue over whether a 'prima facie' case was made out. The only determinative issue is whether the record as a whole supports the legal conclusion that the invention would have been obvious."

Similarly, the present Examiner has not met his burden with factual determinations, nor with a preponderance of the evidence, nor with proper legal conclusions. Hence, the Applicant is entitled to a patent.

1.2 35 USC 112-1 REJECTION

1.2.1 Introduction

The Applicant respectfully traverses the 35 USC 112-1 rejection for the reasons discussed in Sections 1.2.2 et seq.

1.2.2 The Rejection Does Not Establish A Prima Facie Case

The 35 USC 112-1 rejection does not approach the specificity required to establish a prima facie case and to inform the Applicant of the nature of the rejections as required by 35 USC 132.[1]

The burden of establishing a prima facie case rests with the examiner. This burden is not satisfied by the instant rejection.[2] Hence, the 35 USC 112-1 rejection must fall.

The claim limitations are properly disclosed at numerous places in the extensive disclosure, but the rejection disregards the extensive disclosure and instead makes unsupported conclusionary statements about the absence of the claim terminology in the disclosure.

The Examiner must support disclosure rejections with a proper explanation of why the disclosure is not adequate and must provide acceptable evidence or reasoning which supports a lack of adequate disclosure. In re Piasecki, 745 F.2d 1468, 223 USPQ 785 (Fed. Cir. 1984). However, the '112-1 rejection does not provide a proper explanation and does not provide acceptable evidence or reasoning.

The claims are objected to as a group of claims. This is improper. Each claim must be evaluated individually to determine whether the particular claim meets the '112-1 requirement. In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993), In re Wright, 999 F.2d 155, 27 USPQ2d 1510 (Fed. Cir. 1993).

The Examiner does not establish how the objectionable terminology reads on the claims; nor what individual claim a particular listed term reads upon; nor why the antecedent basis

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1. See also 37 CFR 1.106(b); Chester v. Miller, 906 F.2d 1574, 1578, 15 USPQ2d 1333, 1337 (Fed. Cir. 1990) ("Section 132 is violated when a rejection is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection."). See also In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

2. In re Edwards, 568 F.2d 1349, 1354, 196 USPQ 465, 469 (CCPA 1978); In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

is not adequate. Hence, the objection fails to establish a prima facie case.

Since the 35 USC 112-1 rejection does not establish a prima facie case, the 35 USC 112-1 rejection should be withdrawn. In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

1.2.3 The Claim Terminology **Does Not** Have To Be Stated Verbatim

The Examiner apparently requires that the claim language have verbatim basis in the specification. However, this requirement violates the law. Notwithstanding the fact that there is significant verbatim and literal claim terminology in the specification, it is not necessary that the application recite the claim limitations exactly. In re Smythe infra.

> **2163.02 Standard for Determining Compliance With the Written Description Requirement**
>
> ... The subject matter of the claim need not be described literally (i.e., using the same terms or in haec verba) in order for the disclosure to satisfy the description requirement. (MPEP 2163.02)

The fact that the Examiner persists in the '112-1 rejection in view of the extensive antecedent basis in the disclosure indicates that the Examiner requires verbatim recitation of a string of words in exact sequence. This is contrary to the law.

> The function of the description requirement is to ensure that the inventor had possession of, as of the filing date of the application relied upon, the specific subject matter later claimed by him; **how the specification accomplishes this is not material.** In re Smith, 481 F.2d 910, 178 USPQ 620 (CCPA 1973). The claimed subject matter need not be described in haec verba to satisfy the description requirement. In re Smith, 458 F.2d 1389, 59 CCPA 1025, 173 USPQ 679 (1972). It is not necessary that the application describe the claim limitations exactly, but only so clearly that one having ordinary skill in the pertinent art would recognize from the disclosure that appellants invented processes including those limitations. [emphasis added] In re Smythe, 480 F.2d 1376, 178 USPQ 279 (CCPA 1973). In re Herschler, 591 F.2d 693, 700-701; 200 USPQ 711, 717 (CCPA 1979).

Notwithstanding the fact that the disclosure has extensive literal support for the claimed invention, such literal support is not required.

> Compliance with the written description requirement of Section 112 only requires that appellant's application contain sufficient disclosure, **expressly or inherently**, to make it clear to persons skilled in the art that appellant possessed the subject matter claimed. In re Mott, 539 F.2d 1291, 190 USPQ 536, 541 (CCPA 1976). The test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession of the claimed subject matter, **rather than the presence or absence of literal support in the specification for the claim language.** [emphasis added] In re Kaslow, 707 F.2d 1366, 217 USPQ 1089, 1096 (Fed. Cir. 1983). [emphasis added] Ex Parte Harvey, 3 USPQ2d 1626, 1627 (Bd. Pat. App. and Int., 1986).

It is thus clear that no particular language is required and no literal language support is necessary for the claim language. Furthermore, the drawings may be used (but are not required to be used) to support the '112-1 requirement[3] infra. Hence, the instant disclosure, which is extensive, is certainly adequate to comply with 35 USC 112-1.

In view of the above, even literal support is not required for '112-1, hence any requirement for verbatim support is improper.

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3. The content of the drawing may also be considered in determining compliance with the written description requirement. In re Barker, 559 F.2d 588, 194 USPQ 470 (CCPA 1977). In re Kaslow, 707 F.2d 1366, 1375, 217 USPQ 1089, 1096 (Fed. Cir. 1983).

1.2.4 The Disclosure Is Presumptively Correct

The MPEP at section 2164.04 emphasizes the presumptive correct nature of the Applicant's disclosure and cautions the Examiner that, in view of this presumption, there must be sufficient objective reasons to challenge the presumption. Where, as here, the Examiner has not rebutted the presumptively correct disclosure, the 112-1 rejection must fall.

> As a matter of Patent Office practice then, a specification disclosure which contains a teaching of the manner and process of making and using the invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented **must be taken as in compliance with the enabling requirement** of the first paragraph of Section 112 unless there is reason to doubt the objective truth of the statement contained therein which must be relied on for enabling support.
>
> In any event, it is incumbent upon the Patent Office, whenever a rejection on this basis is made, **to explain why it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement.** Otherwise, there would be no need for the applicant to go to the trouble and expense of supporting his **presumptively accurate disclosure.** [emphasis added] In re Marzocchi, 439 F.2d 220, 169 USPQ 367 (CCPA 1967)

> There is no requirement in 35 U.S.C. 112 or anywhere else in the patent law that a specification convince persons skilled in the art that the assertions in the specification are correct.
>
> In examining a patent application, the PTO is required to assume that the specification complies with the enablement provision of Section 112 unless it has 'acceptable evidence or reasoning' to suggest otherwise ... The PTO thus must provide reasons supported by the record as a whole why the specification is not enabling ... Then and only then does the burden shift to the applicant to show that one of ordinary skill in the art could have practiced the claimed invention without undue experimentation.
> Gould v. Mossinghoff, 229 USPQ 1, 13-14 (D.D.C.1985), aff'd in part, vacated in part, and remanded sub nom. Gould v. Quigg, 822 F.2d 1074, 3 USPQ2d 1302 (Fed.Cir. 1987)

1.2.5 The Examiner Alleges Insufficient Disclosure While Ignoring Extensive Relevant Recitations In The Disclosure

The Examiner erroneously bases the '112-1 rejection on a position that the subject terminology has no basis in the disclosure. However, this terminology has ample basis in the disclosure, but the basis for the terminology has been ignored by the rejection. The '112-1 rejection cannot possibly establish a prima facie case until the Examiner evaluates the antecedent basis for this terminology.

The Examiner has not indicated how many occurrences of a term he requires before he considers the term to be adequately disclosed. However, the law of the Federal Circuit does not require even a single verbatim recitation or literal recitation (Section 1.2.3). Hence, the numerous verbatim recitations and literal recitations are certainly adequate.

It is necessary for the Examiner to consider the relevant disclosure and provide acceptable evidence or reasoning regarding any objection to this disclosure as it relates to specific claims. See In re Piasecki supra. The unsupported conclusionary statements in the instant Action violate the law of the Federal Circuit and do not establish a prima facie case.

In view of the above, it is apparent that the Examiner did not consider the disclosure as a whole.

1.2.6 The Disclosure Makes Extensive Use Of Commercially Available Products And Integrated Circuit Components

The description and the figures include extensive disclosure of commercially available products and components, such as commercially available integrated circuit components. The disclosure provides extensive details, including schematic diagrams down to the individual component and individual wire level of detail.

The disclosure includes the widely used series 7400 line of commercially available integrated circuits. The disclosure identifies the components that are used by serial number and by schematic symbols. The disclosure expressly **incorporates by reference** various integrated circuit design books.

The use and disclosure of commercial integrated circuits mounted and interconnected on circuit boards is clearly described in the specification even to the level of cable lists, circuit placement, and software listings.

1.2.7 The Rejections Fail To Establish The Level Of Skill In The Art

The rejection fails to establish the level of ordinary skill in the art and fails to provide evidence or reasoning concerning skill in the art.

The rejection ignores the fact that the disclosure uses well known commercially available components and products (Section 1.2.6) which are routinely used by artisans to implement electronic systems. These commercially available components and products are identified and the design materials are identified and incorporated by reference (Section 1.2.6). It is necessary for the Examiner to properly consider this relevant disclosure and to provide acceptable evidence or reasoning regarding the skill in the art and the disclosure of well known commercially available components and products as it relates to specific claims. Unsupported conclusionary statements violate the law of the Federal Circuit and do not establish a prima facie case.

It is permitted and it is actually preferred for a patent disclosure to rely on what is known in the art and not to repeat that which is well known.

> "If these bridge-gapping tools (the input and the output) are disclosed, there would seem to be no cogent reason to require disclosure of the menial tools known to all who practice this art." [parenthetical expression added] In re Sherwood supra.

"However, paragraph 112-1 does not require that the specification contain what is well known to those skilled in the art." Id; Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co., 730 F.2d 1452, 1463, 221 USPQ 481, 489 (Fed.Cir. 1984)." (In re Hyatt, unpublished decision, Appeal No. 87-1597 (Fed. Cir 1988).

The instant disclosure includes many references to and includes many incorporations by reference of prior art products, knowledge, and documents (Section 1.2.6). However, the rejection totally ignores these prior art disclosures.

Notwithstanding the claimed invention having an adaquate disclosure (Sections 1.2.5, 1.2.6, and 8.3.4 to 8.3.6); the skill in the art established in the instant disclosure provides extensive additional basis for enablement and written description. Hence, it is improper for the rejection to ignore the skill in the art and the instant disclosure related thereto. See Section 1.2.6 regarding prior art products referenced in the disclosure.

1.2.8 The Disclosure

The instant application is extensive with over 500 pages of specification describing over 60 sheets of drawings. See the extensive Table of Contents and the Brief Description of the Drawings, respectively. This disclosure ranges from system level block diagrams and descriptions (e.g., Spec. at 17-61 and Figs. 1A-1P) down to the individual component and individual wire level of detail (e.g., Spec. at 300-71 and Figs. 6B to 6D and 6G to 6AH) for an actually reduced-to-practice experimental system.[4] See, for example, Figs. 6B to 6D showing commercially available integrated circuit gates, flip-flops, and register circuits and Figs. 6G to 6N showing commercially available integrated circuit memory circuits.

The disclosure even provides extensive details of the experimental system that was actually constructed; such as cable lists identifying which signals are on which wire and pin (e.g., Spec. at 510-521); the specific locations where components are placed on circuit boards (e.g., Spec. at 522-543); and source listings of actual computer programs with detailed annotations for the computer instructions (e.g., Spec. at 544-574).

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4. The citations to the disclosure herein are the same for the instant disclosure and for the disclosure in ancestor application Serial No. 06/663,094 filed on October 19, 1984.

1.2.9 The Disclosure Provides Extensive Details In A Top Down Format

The claims are directed to a system having novel combinations of features (e.g., novel memory and processor combinations). The disclosure of these features is arranged in a "top-down"[5] form. Both the figures and the description related thereto are arranged in this "top-down" form. The disclosure provides both an end-to-end system configuration and details down to the electronic component, pin, and wire level of detail. The application discloses an entire system (e.g., Figs. 1A and 1P) from an input device to an output device (e.g., a display output device) and discloses highly detailed schematic diagrams down to the individual component and individual wire level of detail (e.g., Figs. 6B-6D).

A system block diagram is shown in Figs. 1A and 1P with various blocks that are shown in greater detail in other figures. For example, an input device 115A (Fig. 1P) is shown in detailed schematic form in Figs. 6U and 6V, an address generator 115B (Fig. 1P) is shown in detailed schematic form in Figs. 6O-6R, a memory 115C (Fig. 1P) is shown in detailed schematic form in Figs. 6E-6N, a buffer 115D (Fig. 1P) is shown in detailed schematic form in Figs. 6X-6AF, and an output device 115E (Fig. 1P) is shown in detailed schematic form in Figs. 6S and 6T.

Furthermore, Fig. 6A illustrates another block diagram with various blocks that are shown in greater detail in other figures. For example, control logic 610B (Fig. 6A) is shown in detailed schematic form in Figs. 6B-6D, address generators 610C (Fig. 6A) are shown in detailed schematic form in Figs. 6O-6R, memory 610D (Fig. 6A) is shown in detailed schematic form in Figs. 6E-6N, and

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5. The top-down disclosure includes a more general top level shown in block diagram form down to a very detailed level of schematic diagrams with actual commercially available integrated circuit components and actual wires shown between numbered pins on the integrated circuit components.

buffer 610E (Fig. 6A) is shown in detailed schematic form in Figs. 6X-6AF.

Intermediate level figures are provided to further disclose the invention. For example, Fig. 2M provides intermediate level detail[6] to further illustrate the address generator block 115B (Figs. 1P and 2M) and the memory block 115C (Figs. 1 and 2). Other figures (e.g., Fig. 5A, 5D, 6A, and 6E) also provide various intermediate levels of detail.

The figures are described in detail in the extensive specification comprising **over 500 pages** of description. The sections of the specification and the figures are functionally grouped together. For example, the section entitled Address Generators (Spec. at 319-28) discusses the detailed schematic diagrams related to the address generator figures (Figs. 6O-6R). The specification is outlined with the Table of Contents.

The level of detail is illustrated by the disclosure of an experimental system that was **actually** reduced to practice (e.g., Spec. at 240-373 and 544-74 and Figs. 6A-6AH and 7D); including highly detailed schematic diagrams down to the individual component and individual wire level of detail (e.g., Figs. 6B-6D), detailed descriptions thereof down to the individual component and individual wire level of detail (e.g., Spec. at 240-373), cable wire lists (e.g., Spec. at 503-21), integrated circuit component (DIP) location on circuit boards (e.g., Spec. at 522-543), and actual Basic[7] program listings with instructions and detailed annotations (e.g., Spec. at 544-74).

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6. Fig. 2M is intermediate between the block diagram of an address generator 115B and a memory 115C in Fig. 1P and the detailed schematics of an address generator in Figs. 6O-6R and a memory in Figs. 6E-6N.

7. "Basic" is a higher level computer language, available in both a compiler and an interpreter.

The Table of Contents provides a top-down road map (an **indented** outline) of the sections in the disclosure. Top-tier sections include:

GRAPHICS PROCESSOR
SPATIAL FILTERING
MEMORY ARCHITECTURE
BUFFER MEMORY
EXPERIMENTAL SYSTEM

middle-tier sections for the top-tier EXPERIMENTAL SYSTEM section include:

EXPERIMENTAL SYSTEM ARCHITECTURE[8]
LOGIC BOARD
MEMORY BOARDS
BUFFER BOARD
REAR-END BOARD
CIRCUIT SPECIFICATIONS

and lower-tier sections for the middle-tier EXPERIMENTAL SYSTEM ARCHITECTURE section include:

General Description[9]
Supervisory Processor Interface
Image Loading
Software
Description of DIS.ASC Listing
Circuit Boards
Cable List
S-100 Bus System

The section entitled Brief Description of the Drawings (Spec. at 5-14) provides another type of top-down list of the disclosure. For example, Fig. 6A is identified as "a block diagram" and Fig. 6B is "a detailed schematic diagram" (Spec. at 7).

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8. This is the second indented tier in the Table of Contents.

9. This is the third indented tier in the Table of Contents.

In addition, extremely detailed tables of cabling and component placement (Spec. at 503-543) and computer source programs (Spec. at 544-74) are located near the back of the specification.

The experimental system is an actual reduction to practice system that was actually constructed; including, for example, the computer, the computer programs, the computer interface, the address generators, the image memory, the buffer memory, the weight circuitry, the kernel circuitry, and the display monitor. For example, the instant application discloses a computer (e.g., Spec. at 155-60, 241-99, and 575-76 and element 610A in Fig. 6A) filtering an image with a disclosed filter program (e.g., Spec. at 161-180 and 561-566 and Fig. 7D), overlaying graphics vectors into image memory with a disclosed program and initializing address generators and displaying an image with a disclosed program (e.g., Spec. at 155-60 and 544-60). The instant application also discloses an image memory (e.g., Spec. at 181-218 and 329-36, element 115C in Figs. 1P and 2M, element 610D in Fig. 6A, and Figs. 6E-6N) storing image information and being accessed by the address generators (e.g., Spec. at 319-28 and 115B in Figs. 1P and 2M, Figs. 4A and 4B, element 610C in Fig. 6A, and Figs. 6O-6R); a buffer memory (e.g., Spec. at 219-39 and 337-65 and element 115D in Fig. 1P, element 610E in Fig 6A, and Figs. 6W-6AF) buffering accessed image information; a weight circuit generating kernel weights (e.g., Spec. at 161-80, 363-65, and 561-66 and Figs. 5A, 5D, and 6AH), a kernel circuit generating a kernel of image information (e.g., Spec. at 161-80, 360-62, and 561-66 and Figs. 5A-5D and 6AG); a display interface (e.g., Spec. at 366-71 and element 520 in Fig. 5A and Figs. 6S-6T) generating display information; and a display monitor (e.g., Spec. at 366-71, element 115E in Fig. 1P, output from element 610E in Fig. 6A, and Figs. 6S-6T) displaying an image. All of these disclosures and more are compatible and are **combined** in the experimental system.

The experimental system further implements an input arrangement (e.g., joysticks, Spec. at 366-71, element 115A in Fig. 1P, and Figs. 6U-6V).

The experimental system further implements an output arrangement (e.g., a display monitor with a video interface, Spec. at 366-71, element 115E in Fig. 1P, output from element 610E in Fig. 6A, and Figs. 6S-6T).

The experimental system further implements a block memory with a detailed disclosure of a block having eight rows, eight columns, and 64 samples or pixels; an accessing or reading circuit; and a writing circuit (e.g., Spec. at 181-218 and 329-36, element 115C in Figs. 1P and 2M, element 610D in Fig. 6A, and Figs. 6E-6N).

The experimental system further implements memory address generators (e.g., Spec. at 319-28 and 115B in Figs. 1P and 2M, Figs. 4A and 4B, element 610C in Fig. 6A, and Figs. 6O-6R).

The experimental system further implements a computer with detailed disclosures of computer programs (e.g., Spec. at 155-60, 241-47, and 544-74, 610A in Fig. 6A, and Fig. 7D).

The experimental system further implements a spatial processor and a filter processor (e.g., Spec. at 161-80 and 561-66 and Fig. 7D).

The experimental system further implements a graphic processor generating vector information (e.g., Spec. at 155-60 and 544-60).

The experimental system further implements a kernel circuit including a kernel memory and a kernel processor (e.g., Spec. at 161-80, 360-65, and 561-66; and Figs. 5A-5D, 6AG, and 7D).

The experimental system further implements a weight arrangement (e.g., Spec. at 161-80, 363-71, and 562 and Figs. 5A, 5D, 6AH, and 7D).

1.2.10 The Disclosure Is Enabling, Having Schematic Details Down To The Component Level

The disclosure is enabling, including extensive design details. For example, actual "off the shelf" electrical components are shown interconnected in detailed schematic diagrams. The specification has extensive discussions of the schematic components, interconnections, and signals. The disclosure even provides well known component schematic symbols with pin[10] designations and with many individual wire connections between circuit components (e.g., Figs. 6B-6D). For example, the Schottky TTL Databook is expressly incorporated by reference into the instant disclosure. Many of the integrated circuit (IC) components that are shown in the schematic diagrams (e.g., Figs. 6B-6D) are shown in detail in the Data book and are discussed in the specification (e.g., Spec. at 300 et seq).

Many individual wire connections are shown connected to the logic gate, inverter, and flip-flop components. For example, near the lower right hand part of Fig. 6B; a wire CXRM is shown connected from output pin-3 of OR-gate U18C (schematically referred to as signal U18C-3) and is shown connected to input pin-1 of inverter U8A (schematically referred to as signal U8A-1). The specification includes extensive detailed discussions of

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10. Electronic components are usually interconnected with discrete wires or printed wires between **pins** (terminals) on the components. The pins on integrated circuit components are often assigned schematic notations. These same schematic **pin** notations are shown with the integrated circuit components, for example, in Figs. 6B-6C.

the circuitry and the interconnection thereof, as illustrated with the following representative quotation regarding Fig. 6B.[11]

> R-register gating logic will now be discussed **with reference to Fig 6B**.
>
> Gate U19C-1[12] steers the load strobe U22B-3 to clock the register with the computer generated strobe to load the computer generated parameter into the related register. Steering signal U19C-3 steers the computer pulse U19C-2 to the input of gate U18C-1. Gate U18C-3 combines the two mutually exclusive clock signals, the computer strobe and the line sync strobe to clock the XR-register CXRM with signal U18C-3 for the computer strobe and on the rising edge of the line sync pulse.
>
> Gate U19C-10 steers the load strobe U22B-3 to clock the register with the computer generated strobe to load the computer generated parameter into the related register. Steering signal U19C-9 steers the computer pulse U19C-8 to the input of gate U18C-9. Gate U18C-8 combines the two mutually exclusive clock signals, the computer strobe and the line sync strobe to clock the XR-register CXRL with signal U18C-8 for the computer strobe and on the rising edge of the line sync pulse.
>
> Gate U19D-1 steers the load strobe U22B-3 to clock the register with the computer generated strobe to load the computer generated parameter into the related register. Steering signal U19D-3 steers the computer pulse U19D-2 to the input of gate U18C-4[.] Gate U18C-6 combines the two mutually exclusive clock signals, the computer strobe and the line sync strobe to clock the YR-register CYRM with signal U18C-6 for the computer strobe and on the rising edge of the line sync pulse.
>
> Gate U19D-13 steers the load strobe U22B-3 to clock the register with the computer generated strobe to load the computer generated parameter into the related register. Steering signal U19D-12 steers the computer pulse U19D-11 to the input of gate U18C-12. Gate U18C-11 combines the two

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11. The circuits, signals, and interconnections quoted below are labeled consistent with the circuits, signals, and interconnections shown in Fig. 6B. This quoted material can be better understood if reference is made to Fig. 6B.

12. "U19C-1", for example, means the signal or connection at pin 1 of circuit "U19C". Fig. 6B at the middle right side shows U19C-1 as being the output pin "1" of the circuit "U19C", which is labeled as an LS02 (74LS02) type integrated circuit. A 74LS02 integrated circuit is identified as a NOR circuit in the referenced integrated circuit Databook and U19C in Fig. 6B is shown with a well known NOR gate symbol.

mutually exclusive clock signals, the computer strobe and the line sync strobe to clock the YR-register CYRL with signal U18C-11 for the computer strobe and on the rising edge of the line sync pulse.

(Spec. at 314-15) (emphasis and footnote added).

In view of the above, the application has extensive enabling disclosure. Hence, the enablement rejection should be withdrawn.

1.3 DOUBLE PATENTING ISSUES

1.3.1 Introduction

The Applicant respectfully traverses the obviousness double patenting rejection and the double patenting objection (the double patenting issues) for the reasons discussed below.

1.3.2 The Double Patenting Issues Do Not Establish A Prima Facie Case

The double patenting issues do not approach the specificity required to establish a prima facie case and to inform the Applicant of the nature of the issues as required by 35 USC 132.[13]

Various examples of the non-specific and uninformative nature of the double patenting issues are as follows.

a. The instant claims are not addressed individually, but are addressed all together.

b. The rejection does not properly compare a single one of the instant claims with a single one of the patent claims.

c. Each of the instant claims has distinguishing limitations that are not found in the patent claims.

d. The rejection does not show where the patent claims meet the distinguishing limitations of the instant claims.

e. The rejection ignores the restriction requirements in ancestor applications.

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13. See also 37 CFR 1.106(b); Chester v. Miller, 906 F.2d 1574, 1578, 15 USPQ2d 1333, 1337 (Fed. Cir. 1990) ("Section 132 is violated when a rejection is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection."). See also In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

f. Distinguishing claim limitations have been totally ignored.

g. The Federal Circuit requires a limitation by limitation analysis, but the double patenting issues do not even provide a claim by claim analysis (Section 1.3.7).

h. The double patenting issues do not establish that the claim differences are obvious.

i. The double patenting issues do not provide a Graham v. John Deere analysis as required for obviousness-type double patenting (MPEP 804).

j. The double patenting issues do not provide any support for double patenting over **non**analogous systems.

The burden of establishing a prima facie case rests with the examiner. This burden is not satisfied in the instant Action. Hence, the double patenting issues must fall.

Each claim must be evaluated individually. In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The double patenting issues do not properly acknowledge that different claims in the instant application recite different combinations of features, much less compare these different combinations of features with the patent claims.

The double patenting issues do not properly address the claim differences. For example, claim differences must be evaluated using an obviousness analysis in an obviousness-type double patenting issue infra. Therefore, ignoring the claim differences is fatal to the double patenting issues.

Since the double patenting issues do not establish a prima facie case, the double patenting issues should be withdrawn. In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

There are significant differences between the instant claims and the patent claims. Hence, to support an obviousness-type double patenting issue, it is incumbent upon the Examiner to establish that the differences are obvious. In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985). However, the instant

Action fails to establish that the differences are obvious.

An obviousness-type double patenting issue is analogous to an obviousness issue under 35 USC 103. In re Braithwaite, 379 F.2d 594, 154 USPQ 29 (CCPA 1967). Thus, a prima facie case of obviousness-type double patenting must be established in the same manner that it is required for a rejection under 35 USC 103. In re Longi. Accordingly, the factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966) must be employed when making an obviousness-type double patenting analysis. See MPEP 804. However, the instant Action does not provide this analysis. This is a violation of the law of the Federal Circuit.

1.3.3 The Instant Claims Are Independent Or Distinct From The Claims Of The Patent

The double patenting issues must fall because the instant claims are independent or distinct.

The Examiner has made no attempt to show that the claims are neither independent or distinct. This is not surprising because the claims are independent or distinct.

Claims are distinct when they are "capable of separate manufacture, use, or sale as claimed, AND ARE PATENTABLE (novel and unobvious) OVER EACH OTHER (though they may each be unpatentable because of prior art)." (MPEP 802.01). Claims are independent when they are "not dependent" or where "there is no disclosed relationship between the two or more subjects disclosed, that is, they are unconnected in design, operation or effect" (MPEP 802.01). In this determination, it is only the claimed subject matter which is considered (MPEP 806.01).

The Applicant submits that the test is independent or distinct (MPEP 806.01), hence it is not necessary to establish both independence and distinctness to overcome a double patenting issue. Therefore, a determination of independence or alternatively a determination of distinctness requires reversal of the double patenting issues. In the present application, the

instant claims are independent or distinct from the patent claims.

In view of the above, the instant claims do not recite, do not need, and are not dependent on the inventions claimed in the patent. These systems are not dependent on each other nor do they require each other (even though they can optionally be used together). They can function with or without each other. Hence, the system of the instant application and the system of the patent are independent of (not dependent on) each other (MPEP 802.01).

Additionally, the system claimed in the instant application and the system of the patent can each be separately manufactured, used and sold. Hence, the instant claims and the patent claims are distinct from each other (MPEP 802.01).

Distinctness is addressed in In re Heinle, 342 F.2d 1001, 145 USPQ 131 (CCPA 1965). The application claims in Heinle were "separately usable and salable" and hence were distinct from the patent claims. Similarly, the system of the instant claims and the system of the patent are "separately usable and salable". The instant claims are therefore independent or distinct from the patent claims.

Since the instant claims are independent or distinct from the patent claims, the double patenting issues cannot stand.

1.3.4 There Are Many Differences Between The Instant Claims And The Patent Claims

The rejection does not compare a single instant claim and the rejection does not explain why the double patenting issues are maintained in view of the claim differences.

For example, the double patenting issues do not establish obviousness of the differences and do not provide the necessary Graham v. John Deere[14] analysis of the differences which is

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14. Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966).

required to support obviousness-type double patenting. Also see MPEP 804.

1.3.5 The Federal Circuit Requires A Limitation-By-Limitation Analysis, But The Double Patenting Issues Do Not Even Provide A Claim-By-Claim Analysis

The Federal Circuit requires that rejections be supported on a limitation by limitation basis with specific fact findings for each contested limitation and satisfactory explanations for such findings. The claim construction used in contesting the limitations **must** also be explicit. The Federal Circuit also **requires** fact findings, adequately explained, for each relevant factor. See Gechter v. Davidson, 43 USPQ2d 1031 at 1035 (Fed. Cir. 1997). However, the double patenting issues fail to meet these requirements. **The double patenting issues do not even provide a claim by claim analysis, much less a limitation by limitation analysis.**

Gechter v. Davidson supra followed closely on the heels of Warner-Jenkinson Co. v. Hilton Davis Chemical Co., 117 S.Ct. 1040, 41 USPQ2d 1865 (1997) where the Supreme Court affirmed the requirement for an element by element analysis in defining the scope of a patented invention in infringement analyses.

Gechter v. Davidson supra addresses 35 USC 102 and 35 USC 103 rejections. However, it is well-established that an obviousness-type double patenting issue requires the same type of obviousness analysis as a 35 USC 103 obviousness rejection. Hence, Gechter v. Davidson supra is equally relevant to obviousness type double patenting issues.

1.4 TRAVERSE OF 37 CFR 1.83 AND 37 CFR 1.75 OBJECTIONS

The Applicant traverses the objections for the reasons discussed below.

The 37 CFR 1.75 and 37 CFR 1.83 objections do not establish a prima facie case. For example, the subject features are shown and are recited at numerous places in the extensive disclosure, but the objections completely disregard the extensive disclosure and instead makes general statements about the absence of the subject features in the disclosure. Also see Sections 1.2.2 and 1.3.2 herein.

The 37 CFR 1.75 and 37 CFR 1.83 objections are improper constructive rejections of claims and are in conflict with the 35 USC 112-1 rejection. For example, this issue is covered by the 35 USC 112-1 rejection in the instant action and this issue is clearly appealable; hence this issue cannot also be covered by an objection which is petitionable.

It is well established that it is the content and not the form of the disclosure that is important In re Sherwood, 204 USPQ 537, 545 footnote 8 (CCPA 1980). The claim elements are shown in the figures sufficient to meet 37 CFR 1.83(a). A requirement for any more would violate In re Sherwood.

1.5 35 USC 103 REJECTION

1.5.1 The 35 USC 103 Rejections Do Not Establish A Prima Facie Case

The 35 USC 103 rejections do not approach the specificity required to establish a prima facie case and to inform the Appellant of the nature of the rejections as required by 35 USC 132.[15]

The rejection relies on unsupported allegations regarding about what is known and what is inherent in the references. However, the rejection does not properly support such allegations.

Various examples of the non-specific and uninformative nature of the instant rejections are as follows.

a. The rejection does not determine the scope and content of the prior art (MPEP 2141) and hence did not establish a prima facie case.

b. The rejection does not ascertain the differences between the prior art and the claims in issue (MPEP 2141) and hence does not establish a prima facie case.

c. The rejection does not resolve the level of ordinary skill in the pertinent art (MPEP 2141) and hence does not establish a prima facie case.

d. The rejection does not evaluate secondary considerations (MPEP 2141) and hence does not establish a prima facie case.

e. The Federal Circuit requires a limitation by limitation analysis, but the art rejections do not

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15. See also 37 CFR 1.106(b); Chester v. Miller, 906 F.2d 1574, 1578, 15 USPQ2d 1333, 1337 (Fed. Cir. 1990) ("Section 132 is violated when a rejection is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection."). See also In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

even provide a claim by claim analysis (Section 1.3.7).

f. The references do not suggest the desirability and thus the obviousness of making the combination (MPEP 2141) and hence did not establish a prima facie case.

g. The rejection does not view the references without the benefit of impermissible hindsight vision afforded by the claimed invention (MPEP 2141) and hence does not establish a prima facie case.

h. The rejection does not establish a reasonable expectation of success as the standard with which obviousness is determined[16] (MPEP 2141) and hence does not establish a prima facie case.

i. The rejection does not establish motivation for an artisan to make the combination; instead the rejections make unsupported conclusionary statements about the references.

j. The rejection does not consider the claimed invention as a whole (MPEP 2141) and hence does not establish a prima facie case.

k. The rejection does not consider the references as a whole (MPEP 2141) and hence does not establish a prima facie case.

l. The prior art reference (or references when combined) must teach or suggest all the claim limitations.

m. The rejections do not provide acceptable evidence or reasoning.

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16. See Hodesch v. Block Drug Co. Inc., 786 F.2d. 1136, 1143 n.5, 229 USPQ 182, 187, n.5 (Fed. Cir. 1986).

n. The rejection is based upon unsupported conclusionary statements regarding obviousness, but the rejection does not provide proper support for this statement.

o. The rejection completely disregards relevant claim limitations.

p. The claims are not addressed individually, but are rejected as a group of claims.

q. Each of the instant claims has distinguishing limitations that are not found in the references.

r. The rejection does not show where the references meet the distinguishing limitations of the instant claims.

s. The rejections do not provide any support for obviousness of **non**analogous systems (Section 1.3.8).

t. The rejections do not establish that the claim differences are obvious.

The burden of establishing a prima facie case rests with the examiner. See In re Piasecki, 745 F.2d 1468, 223 USPQ 785 (Fed. Cir. 1984). This burden is not satisfied by mere comparison of claimed elements with elements in the references.[17] Hence, the 35 USC 103 rejections must fall.

The Examiner must support art rejections with a proper explanation of why the claims are obvious and must provide acceptable evidence or reasoning. See In re Piasecki. However, the rejections do not provide a proper explanation and do not provide acceptable evidence or reasoning.

The instant rejections fail to evaluate the differences, which is fatal to the rejections.

> Appellant was entitled to have differences between the claimed invention, the subject matter as a whole, and the prior art references of record evaluated. ... This the

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17. In re Edwards, 568 F.2d 1349, 1354, 196 USPQ 465, 469 (CCPA 1978); In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

examiner failed to do. In re Lunsford, 148 USPQ 721 (CCPA 1966).

The 35 USC 103 rejections fail to make a Graham v. Deere analysis. However, a Graham v. Deere analysis is required to support a 35 USC 103 rejection. See MPEP 2141, 2141.01, 2141.03, 2142, 2143.01, and 2143.03.

Graham v. Deere requires that the Examiner determine the scope and content of the prior art, ascertain the differences between the prior art and the claims in issue, resolve the level of ordinary skill in the pertinent art, and evaluate evidence of secondary considerations. However, the 35 USC 103 rejections do not even address these requirements much less satisfy these requirements.

The legal concept of prima facie obviousness is a procedural tool of examination which applies broadly to all arts. It allocates who has the burden of going forward with production of evidence in each step of the examination process. See MPEP 2142.

The claims are rejected as a group of claims. This is improper. Each claim must be evaluated individually. In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993), In re Wright, 999 F.2d 155, 27 USPQ2d 1510 (Fed. Cir. 1993).

The 35 USC 103 rejections fail to consider important claim limitations. However, a 35 USC 103 rejection must consider all of the words in the claims. In re Wilson, 424 F.2d 1382, 165 USPQ 494, 496 (CCPA 1970). See MPEP 2143.03.

The prior art must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). See MPEP 2143.03. However, the rejections fail to establish what is relied on in the references to teach or suggest many of the claim recitations.

The rejections do not properly acknowledge that different claims in the instant application recite different combinations of features, much less compare these different combinations of features with the references.

Since the art rejections do not establish a prima facie case, the art rejections should be reversed. In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

1.5.2 The Rejections Rely On Improper Hindsight

The 35 USC 103 rejections rely on improper hindsight. This is fatal to the art rejections.

> It is difficult but necessary that the decisionmaker forget what he or she has been taught ... about the claimed invention and cast the mind back to the time the invention was made (often as here many years), to occupy the mind of one skilled in the art who is presented only with the references, and who is normally guided by the then-accepted wisdom in the art. W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). See MPEP 2141.01.

The Examiner must ascertain what would have been obvious to one of ordinary skill in the art at the time the invention was made, and not to the inventor, a judge, a layman, those skilled in remote arts, or to geniuses in the art at hand. See MPEP 2141.03.

The prior art items themselves must suggest the desirability and thus the obviousness of making the combination without the slightest recourse to the teachings of the application. More specifically, the court stated that "Both the suggestion and the expectation of success must be founded in the prior art, not in applicant's disclosure." Hindsight is not a justifiable basis on which to find obviousness. Amgen, Inc. v. Chugai Pharmaceutical Co., Ltd., 927 F.2d 1200, 18 USPQ2d 1016 (Fed. Cir. 1991).

> When the patented invention is made by combining known components to achieve a new system, the prior art must provide a suggestion or motivation to make such a combination. Heidelberger Druckmaschinen AG v. Hantscho Commercial Products Inc., 21 F.3d 1068, 30 USPQ2d 1377 (Fed. Cir. 1994).

Obviousness is tested by what the combined teachings of the references would have suggested to those of ordinary skill in the

art. It cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. The examiner cannot rely on hindsight.

> To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher. ... It is essential that `the decisionmaker forget what he or she has been taught at trial about the claimed invention and cast the mind back to the time the invention was made...to occupy the mind of one skilled in the art who is presented only with the references, and who is normally guided by the then-accepted wisdom in the art....One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

The mere fact that the prior art may be modified to reflect the features of the claimed invention does not make the modifications and hence the claimed invention, obvious unless the desirability of such modification is suggested by the prior art; the claimed invention cannot be used as an instruction manual or template to piece together the teachings of the prior art so that the claimed invention is rendered obvious. In re Fritch, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992).

It stated further that it is not realistic "to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art.

1.5.3 Graham V. Deere

The starting point of any analysis of the obviousness or non-obviousness of a claimed invention is the Supreme Court's decision in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966).

In evaluating whether a prima facie case has been established, the Supreme Court in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966) focused on the procedural steps necessary to establish a factual basis for a rejection under section 103. Thus, it is required that the Examiner evaluate 1) the scope and content of the prior art, 2) the differences between the prior art and the claims at issue, and 3) the level of ordinary skill in the art. Applying these steps, the obviousness or nonobviousness of the subject matter is determined. Secondary considerations such as commercial success, long felt but unsolved needs, failure of others, etc. may have relevancy as indicia of obviousness or nonobviousness.

A determination of obviousness requires that the Examiner establish a prima facie case. In so doing, the starting point for making such a determination of obviousness is the fact findings for each of the relevant obviousness factors in Graham v. John Deere. In the case of Gechter v. Davidson, 116 F.3d 1454, 43 USPQ2d 1030 (Fed. Cir. 1997), the Federal Circuit stated that it expects an obviousness analysis to be conducted on a limitation by limitation basis, with specific fact findings for each limitation and claim construction must be explicit. In the absence of such an analysis for each claim limitation and the Graham factual inquiries, there is, by inference from the court, an insufficient factual basis upon which to support a determination of obviousness.

The Board, in Horton v. Stevens infra reflected the position now clarified by the Federal Circuit in Gechter v. Davidson. The Board found that there was an insufficient analysis to make out a case for anticipation or obviousness. It stated

> We find that Horton has failed to present an appropriate analysis of the prior art reference vis-a-vis

> the claimed subject matter which would be sufficient to make out a case for anticipation or obviousness. There is little explanation in the Horton brief to provide adequate factual support for the conclusory statements set forth therein. If Horton considered the subject matter of any Stevens claim to have been anticipated or rendered obvious by Levendusky, he should have analyzed the reference in detail in accordance with the guidelines set forth in Graham v. John Deere Co., ... Specifically, he should have separately addressed each claim limitation in explaining where in the reference relevant subject matter is disclosed, what the differences are, and why the claimed invention as a whole would have been obvious to a person having ordinary skill in the art. Horton did not do this. Horton v. Stevens, 7 USPQ2d 1245 (Bd. Pat. App. & Int. 1988)

The Board went on to list the limitations which were not separately addressed. The Board stated that the proponent of unpatentability has the burden of establishing that the claims are either anticipated or rendered obvious and emphasized the necessity to employ the factual inquiries set forth in Graham v. Deere.

Failure to make a Graham v. Deere analysis is fatal to the 35 USC 103 rejections.

> In patent cases, the need for express Graham findings takes on an especially significant role because of an occasional tendency of district courts to depart from the Graham test, and from the statutory standard of unobviousness that it helps determine, to the tempting but forbidden zone of hindsight. Loctite Corp. v. Ultraseal Ltd., 781 F.2d 861, 228 USPQ 90 (Fed. Cir. 1985)

The court went on to say that sometimes, the failure to make findings is characterized as a dereliction of duty, citing Seattle Box Co. v. Industrial Crating & Packing, 756 F.2d 1574, 1578, 225 USPQ 357, 360 (Fed. Cir. 1985). Other times, the failure to make specific Graham findings constitutes error citing Jones v. Hardy, 727 F.2d 1524, 1529, 220 USPQ 1021, 1025 (Fed. Cir. 1984).

The court makes clear that Graham findings are necessary in order to reach a conclusion of obviousness/unobviousness. It can be concluded from the comments of the court that a rejection must fail if there is an insufficient factual basis upon which to reach a conclusion of obviousness. The court stated that Graham

was cited but its guidance was not applied, resulting in the application of hindsight and speculation which is prohibited.

1.5.4 Criteria

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP 2142.

A statement that modifications of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). See MPEP 2143.01.

1.5.5 The '103 Rejections Are Improperly Based Upon Inherency

The rejection improperly relies on inherency. The rejection does not support these allegations; e.g., the absence of the required Gechter or Graham analysis and the absence of a showing of the bases in fact and/or technical reasoning required by the MPEP.

Reliance on inherency requires support which has not been provided in the rejection. Objective evidence or cogent

technical reasoning is needed to support a conclusion of inherency. See MPEP 2112. For example, the rejection does not perform the required Gechter or Graham analysis. This is not surprising since a Gechter or a Graham analysis would establish that reliance on such inherency is erroneous. Hence, the rejection does not establish a prima facie case.

The instant rejections are fatally defective because they rely on bare allegations of inherency without any substantive support. MPEP 2112 sets forth the requirements for reliance on inherency to support a rejection; however the rejection neither addresses nor meets these requirements in support of the '103 rejection.

> In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.

Levy.[18]

> "[A]ssertions of technical facts in areas of esoteric technology must always be supported by citation of some reference work" and "allegations concerning specific 'knowledge' of the prior art, which might be peculiar to a particular art should also be supported."

MPEP 2144.03 quoting Ahlert.[19] However, the rejection does not provide any basis in fact or technical reasoning to support the inherency allegation and the allegedly inherent characteristic does not necessarily flow from the teachings of the applied prior art. Hence, for these additional reasons, the inherency allegations are fatally defective.

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18. Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). (MPEP 2112) (emphasis in original).

19. MPEP 2144.03 (quoting In re Ahlert, 424 F.2d 1088, 1091, 165 USPQ 418, 420-21 (CCPA 1970)).

Notwithstanding the above discussed failure to establish inherency, the rejection does not address other requirements regarding inherency.

> ... the inherency of an advantage and its obviousness are entirely different questions. That which may be inherent is not necessarily known. Obviousness cannot be predicated on what is unknown.

Spormann.[20] However, the rejection does not establish that the allegedly inherent limitation was "necessarily known". Hence, for this additional reason, the rejection is fatally defective.

1.6 TRAVERSE OF ALLEGATIONS OF ADMISSIONS, INHERENCY, CONVENTIONAL, AND WELL KNOWN

The rejection makes various unsupported allegations regarding the disclosure and than alleges an admission of lack of support by the disclosure. However, the Applicant properly traversed the '112-1 rejection herein. For example, the claims find literal antecedent basis, but the rejection ignores the many pertinent recitations in the disclosure and does not acknowleged any antecedent basis at all.

Further, the rejection makes unsupported allegations regarding what is known and what is inherent in the references. However, the rejection does not properly support such allegations.

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20. In re Spormann, 363 F.2d 444, 150 USPQ 449 (CCPA 1966).

1.7 THE § 132 ISSUE

The claims are alleged to include new matter under § 132 and the claims are required to be cancelled. However, amended claims are not subject to such a § 132 objection or cancellation requirement and the Examiner has no authority to require cancellation of the claims. It is not surprising that the Examiner has not cited any authority in support of this remarkable requirement.

1.8 THE § 101 REJECTION REGARDING SIGNAL TERMINOLOGY IS IMPROPER IN LIGHT OF THE STATUTE AND THE LAW OF THE FEDERAL CIRCUIT

The § 101 rejection of claims reciting signal terminology is improper in light of the statute and in light of the PTO Examination Guidelines. Furthermore, the § 101 rejections of such signal claims are in violation of the law of the Federal Circuit. Finally, notwithstanding the legal impropriety of the § 101 rejection of signal terminology, the disclosure provides extensive support for "signal" terminology.

The § 101 rejection is contradicted by the PTO Examination Guidelines regarding "signal" terminology.

> Products may be either machines, manufactures or compositions of matter.
>
> A machine is:
>
> a concrete thing, consisting of parts or of certain devices and combinations of devices.
>
> Burr v. Duryee, 68 US (1 Wall.) 531, 570 (1863).
>
> A manufacture is:
>
> the production of articles for use from raw or prepared materials by giving to these material new forms, qualities, properties or combinations, whether by hand-labor or by machinery.
>
> Diamond v. Chakrabarty, 447 US at 308, 206 USPQ at 196-197 (quoting American Fruit Growers, Inc. v. Brogdex Co., 283 US 1, 11 (1931).

Examination Guidelines.[1] See also Harmon[2]:

> The eligible **products** identified in paragraph 101 are machines, manufactures, and compositions of matter.

Clearly, the disclosed signals constitute "manufactures" because the signals are physical things[3] that are made, for example, by the disclosed circuits.

In view of the above, the signal terminology in the claims is consistent with the statutes, case law, and PTO guidelines. Hence, the § 101 rejections regarding signal terminology should be withdrawn.

1.9 COMMENTS ON AMENDMENTS TO THE SPECIFICATION

The amendment to page 46 lines 2-3 does not involve new matter. This amendment updates the reference to related patent applications to add the patents that issued thereon.

The amendment to page 469 lines 22-23 does not involve new matter. This amendment directly incorporates by reference Patent No. 4,486,850 which is indirectly incorporated by reference through a patent and patent applications that are incorporated by reference in the instant application. For example, Patent No. 4,435,732 is incorporated by reference into the instant application at page 469 lines 22-23 and it incorporates by reference Patent No. 4,486,850. Also, application Serial No. 812,285 (now Patent No. 4,371,953) is incorporated by reference into the instant application at page 46 lines 2-4 and it

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1. Examination Guidelines For Computer-Related Inventions, 1184 OG 87 at 96, FN 35.

2. Robert L. Harmon, Patents and the Federal Circuit at 27, Second Edition, BNA (1991) (emphasis added).

3. Signals are "necessarily physical." Arrhythmia Research Technology Inc. v. Corazonix Corp., 22 USPQ2d 1033, 1038 (Fed. Cir. 1992). See also In re Taner et. al., 214 USPQ 678, (CCPA 1982); In re Sherwood, 613 F.2d 809, 204 USPQ 537, 545 FN 8 (CCPA 1980); and In re Johnson, 589 F.2d 1070, 200 USPQ 199 (CCPA 1978).